

REMARKS

Reconsideration and withdrawal of the rejections of the claimed invention is respectfully requested in view of the amendments, remarks and enclosures herewith, which place the application in condition for allowance.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 33-61 are now pending in this application. New claims 59-61 combine the elements of claims 50/53, 51/54 and 52/55. No new matter has been added.

Applicants note that the applicants' petition to withdraw the finality of the rejection was *granted* (see Petition Decision mailed on 25 March 2009). Therefore, the rejection is in *non-final status*. The applicants note that this is the *second* time that a final rejection in this application was deemed to be premature by the Group 1600 Technology Center.

It is submitted that the claims, herewith and as originally presented, are patentably distinct over the prior art cited in the Office Action, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. The amendments of the claims, as presented herein, are not made for purposes of patentability within the meaning of 35 U.S.C. §§§§ 101, 102, 103 or 112. Rather, these amendments and additions are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. THE 35 U.S.C. 103(a) REJECTION HAS BEEN OVERCOME

1. Claims 33, 34, 37-43, 45-49, 52, 53 and 55-57 were rejected as allegedly being obvious over Levitt (U.S. Patent 4,371,391). The applicants request reconsideration of this rejection for the following reasons.
2. Claims 33-38, 40, 42-52, 54 and 56-58 were rejected as allegedly being obvious over Bieringer et al. (U.S. Patent 6,159,900) and Frisch et al. (U.S. Patent 4,853,026). The applicants request reconsideration of this rejection for the following reasons.

As previously noted, the herbicidal active agents now encompass **glufosinate, paraquat and salts thereof** and the carrier is selected from the group consisting of **aerogels, high-molecular-weight polyglycols and polymers based on acrylic acid, methacrylic acid and copolymers thereof** (method of use claims also include fuller's earth as the carrier).

Although new references have been applied, the applicants previous arguments still apply to these new references and have other deficiencies which do not serve to establish a prima facie case of obviousness over the presently claimed invention.

A. Arguments from previous response still apply to new references

1. No evidence which countermands assertion that pre-emergence herbicides would not be used in a pre-emergent manner for those of skill in the art

The applicants provided in a previous response a discussion of the state of the art with regard to pre-emergence and post-emergence herbicides. However, no supporting evidence was provided by the Examiner as to why one of ordinary skill in the art would use a post-emergent herbicide in a pre-emergent manner especially when the applicants provide evidence which refuted the Examiner's unsupported position. The applicants repeat below the explanation from the previous Office Action (amended to indicate that the rejections are now based on obviousness) and if there is evidence which supports the Examiner's position or contradicts the position taken by the applicants, the applicants request that it is presented in the next communication so that this issue can be resolved on Appeal.

2. Introduction

In order to establish obviousness, all of the elements of the applicants' claimed invention must be taught or suggested by the cited reference or be available as general knowledge to those of skill in the art. The applicants maintain the positions previously presented in their earlier responses, but after seven (7) office actions, three (3) advisory actions and one (1) Examiner's Answer, it is apparent from the file history that either the nature of the applicants' invention has been lost or that there was never a complete understanding of the herbicidal technology in the first place. The applicants will now attempt to reset the discussion which should be help clarify the issues for Appeal should the rejection be maintained.

3. Pre-emergence vs. Post-emergence

The nature of the invention centers around controlling the growth of undesirable harmful plants *pre-emergently* with a *post-emergence* herbicide.

The terms "pre-emergent" and "post-emergent" are not terms which have been created by the applicants but are terms which have a distinct meaning to those of ordinary skill in the

agrochemical arts. A representative meaning of these terms is provided from the website of the Biological and Agricultural Engineering department of the North Carolina State University ("Postemergence Herbicides" – <http://www.bae.ncsu.edu/programs/extension/ag-env/nursery/postemergence.html> - hereafter the "State article" – previously presented).

The State article teaches that pre-emergent herbicides are applied *before* the weeds emerge and are active in the soil and prevent the weeds from emerging.

In contrast, a post-emergent herbicide will only be active *after* the weeds emerge, i.e. the mechanism for action of the post-emergent herbicide relies on the infrastructure of the weed, e.g. uptake through the roots or direct contact on the weed such as on the leaves. Obviously, one problem with post-emergent herbicides is that they would be ineffective if the weed has not yet emerged. In addition, certain post-emergent herbicides such as glyphosate and glufosinate are so potent that not only do they kill the harmful plants but also kill the plant of interest.

Furthermore, to the extent that one of ordinary skill in the art would even think to use a post-emergent herbicide in a pre-emergent manner, the state of the art actively taught against such a usage.

For example, glufosinate-ammonium (2-amino-4-(hydroxymethylphosphinyl)butanoic acid), for example, which can be used as herbicide with foliar action is known to be *decomposed rapidly in the soil, so that it is not capable of displaying any herbicidal action* (G. Hoerlein in "Reviews of Environmental Contamination and Toxicology", vol. 138, Springer-Verlag; "The Pesticide Manual", 11th Edition, 1997, British Crop Protection Council) and the herbicide glyphosate (N-(phosphonomethyl)glycine), which likewise has foliar action, is known to be adsorbed strongly by the soil *and to be degraded therein, so that it is not available to the plant in sufficient amounts* (L. Torstensson in "The Herbicide Glyphosate", Butterworths, pp. 137-150). As further evidence, the applicants provided the following references in an IDS which accompanies a previous response:

- (1) "Detoxification of glyphosate in soil", N. T. L. Tortenson, Weed Research, 1977, vol 17, 209-212;
- "*When the chemical comes in contact with soil it is rapidly inactivated.*"
[page 209 column 2]

- (2) "Rapid inactivation of glyphosate in the soil", P. Sprankle et al., Weed Science, 1975, vol 23, 224-228;
- *"In summary, glyphosate was rapidly inactivated in the soil. Corn and soybean plants grown for 16 days absorbed only very small quantities from the soil. However, glyphosate could be absorbed by plants from nutrient solution. The rapid inactivation of large quantities of glyphosate by organic and mineral soils but not washed quartz sand indicated that the herbicide was adsorbed to the soil. Glyphosate adsorption to the soil was reversible with phosphate competing with glyphosate for binding sites. The initial step in the inactivation of glyphosate applied to the soil appears to be rapid binding to the soil and not microbial or chemical degradation."*
- [page 228 column left, last paragraph]
- (3) "Adsorption, Mobility, and Microbial Degradation of Glyphosate in the Soil", P. Sprankle et al., Weed Science, 1975, vol 23, 229-234;
- *"Foliar applications of glyphosate at 1.12 to 4.48 kg/ha control many perennial weeds without causing injury to crops planted a few days after application. Although the herbicide is absorbed by wheat (Triticum aestivum L. 'Avon') from nutrient solution, crop plants do not readily absorb the herbicide from mineral soils. Soil applications of glyphosate at 56.0 kg/ha did not injure wheat plants grown in muck or clay soils. Glyphosate, a substituted glycine may be bound to soil in a manner similar to glycine and/or phosphate. ..."*
- [page 229 column 1]
- (4) "Metabolism and Degradation of Glyphosate in Soil and Water", M. L. Rueppel et al., J. Agric. Food Chem., vol 25 (1977), 517-526;
- *"Complete and rapid degradation of glyphosate (1) occurs in soil and/or water microbiologically and not by chemical action."*
- [page 517, summary, first sentence]
- *"The parent herbicide has also been shown to be stable to sunlight, nonleachable in soil, to have a low propensity for runoff, and to have a minimal effect on microflora"*
- [page 517, summary, last sentence]

4. Nothing from Levitt or the combination of Bieringer and Frisch teaches this aspect of the applicants' claimed invention

Both Levitt and the combination of Bieringer and Frisch represent the conventional state of the art and do not teach or suggest a method of controlling the growth of undesirable harmful plants pre-emergently with a post-emergence herbicide (now limited to glufosinate, paraquat and salts thereof).

B. Evidence of secondary consideration was previously provided, but was not considered in light of the Levitt and Bieringer and Frisch rejections

Determinations of obviousness also require consideration of secondary considerations. As noted above, the state of the art was such that one of ordinary skill in the art would not have expected a post-emergent herbicide to be effective in a pre-emergent capacity. As such, the data provided in the specification (see pages 15-18) and by Dr. Udo Bickers in the declaration filed is surprising that ANY pre-emergent activity was observed, i.e. one of ordinary skill in the art would have expected to see no pre-emergent activity as was disclosed by Dr. Bickers in Table A, B and C of his declaration for compositions outside the scope of the claimed invention.

The results in the specification and declaration are even more surprising in that not only was pre-emergent activity observed, but little to no damage was observed for useful plants (see e.g. Table 5 from the specification where there was no effect on HORVS (barley)).

C. Request teleconference with applicants' representative prior to issuing another Office Action

As there has not been any prior art provided during the entire prosecution history which teaches comprises applying an effective amount of herbicidal composition by the pre-emergence method despite numerous Office Actions and the constant changing of prior art by the Examiner has never improved the holding of obviousness, the applicants are inclined to file an Appeal Brief regardless of whatever references are cited with any additional Office Action.

In order to avoid the Appeal and Reply Brief, the Examiner is encouraged to contact the undersigned to work out a mutually agreeable solution.

III. THE OBVIOUSNESS-TYPE DOUBLE PATENTING (ODP) REJECTIONS HAVE BEEN OVERCOME

Claims 14, 15, 17-20, 22, 24, 27 and 29-32 were rejected for obviousness-type double patenting over Bickers et al. (U.S. Patent 6,770,594 - filing date 23 July 2001 - “Bickers”).

Claims 14, 15, 17-20, 22, 24, 27 and 29-32 were rejected for obviousness-type double patenting over Schnabel et al. (U.S. Patent 6,693,063 - filing date 18 December 2001 - “Schnabel”).

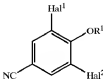
Response to Office Action Response

The applicants are confused not only by the application of an obviousness-type double patenting rejection, but also the response by the Examiner as it does not appear to recognize any difference between an obviousness rejection and an obviousness-type double patenting rejection.

MPEP 804, section III (Contrast Between Double Patenting Rejection and Rejections Based on Prior Art) states in part “...[r]ejections over a patent or another copending application based on double patenting or 35 U.S.C. 103(a) are similar in the sense that both require comparison of the claimed subject matter with at least part of the content of another patent or application, and both may require that an obviousness analysis be made. **However, there are significant differences between a rejection based on double patenting and one based on 35 U.S.C. 102(e) prior art under 35 U.S.C. 103(a).** *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

One significant difference is that a double patenting *rejection must rely on a comparison with the claims in an issued or to be issued patent*, whereas an >anticipation or< obviousness rejection based on the same patent under 35 U.S.C. 102(e)/ 103(a) relies on a comparison with what is disclosed (whether or not claimed) in the same issued or to be issued patent. In a 35 U.S.C. 102(e)/103(a) rejection over a prior art patent, the reference patent is available for all that it fairly discloses to one of ordinary skill in the art, regardless of what is claimed. *In re Bowers*, 359 F.2d 886, 149 USPQ 570 (CCPA 1966).

Applying these guidelines to the claims of Bickers and Schnabel, it is clear that these claims are not even remotely close to the presently claimed invention when restricted to a claim by claim comparison. For illustrative purposes, compare claim 1 of Bickers and Schnabel with claim 1 of the applicants invention above:

Bickers	Schnabel
<p>I. A herbicidal composition comprising</p> <p>a) one or more herbicidal active substances,</p> <p>b) one or more surfactants other than silicone surfactants, and</p> <p>c) one or more humectants selected from the group consisting of lactic acid and lactic acid derivatives.</p>	<p>I. A herbicidal composition, comprising</p> <p>A) one or more compounds of the formula (I)</p> <div style="text-align: center;">  </div> <p>(I)</p> <p>wherein</p> <p>Hal¹ and Hal² are identical or different halogen atoms, R¹ is H, a cation or a C₁-C₂₀-carbon-containing radical, wherein said one or more compounds are microencapsulated into one or more polymeric materials of synthetic and/or natural origin, and</p> <p>B) one or more surfactants, comprising as structural element at least 12 alkylene oxide units.</p>

For convenience sake, the applicants also reproduce the argument against the obviousness type double patenting rejection from the applicants' previous response.

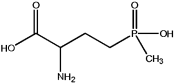
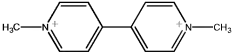
Arguments from Previous Response

Rejections based on obviousness-type double patenting have certain similarities with obviousness rejections, however, the former is limited to a comparison of the respective claims. For the presently amended claims, neither Bickers or Schnabel would suggest the applicants' claimed invention when merely presented with the respective claims.

Bickers generically refers to herbicidal active substances in combination with a surfactant other than a silicone surfactant and one or more humectants selected from the group consisting of lactic acid and lactic acid derivatives.

Schnabel refers 1,3-halo-2-alkoxy-5-cyano-phenyl compounds as the herbicidal active in combination with one or more surfactants comprising as a structural element at least 12 alkylene oxide units.

In contrast, the applicants' claims are directed toward glufosinate or paraquat of salts thereof:

Glufosinate	Paraquat
	

Neither Bickers nor Schnabel's claims would direct one of ordinary skill in the art to these specific herbicides. Likewise, neither Bickers not Schnabel's claims would direct one of ordinary skill in the art to combining glufosinate and paraquat or salts thereof with a carrier selected from the group consisting of fuller's earth, aerogels, high-molecular-weight polyglycols and polymers based on acrylic acid, methacrylic acid and copolymers thereof nor do the references suggest using a post-emergent herbicide in a pre-emergent manner.

CONCLUSION

In view of the remarks and amendments herewith, the application is believed to be in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date, and, the Examiner is invited to telephonically contact the undersigned to advance prosecution.

Respectfully submitted,
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